

Weaknesses of landscape-oriented approaches lie partly in the resolution of the vegetation cover maps. Even where the cover classes are mapped accurately, they do not provide much detail regarding floristic composition beyond the presence of a few dominant species. They do not provide much, if any, information on habitat quality, for example the maturity of the community or the proportion that remains of its original flora and fauna.

Other weakness relate to the dependency on predictive modeling. Not only is it difficult to make accurate predictions about habitat affinities, particularly for vertebrates, but there is no way to determine – short of conducting ground-based surveys – whether the species are actually present in a particular landscape unit. Predictive modeling is especially likely to miss populations of rare species, whose distributions may reflect historic events as much as the current distribution of their habitats. Many rare species, moreover, are associated with high quality habitats, which, as mentioned above, are difficult to detect using high elevation photography.

Finally, the concern of landscape analysis with large tracts of habitat and wide-ranging species, produces a bias against assigning significance to small sites that contain relict, but still viable populations of critically rare species. Such approaches are particularly unsuited for assigning importance to small remnant tracts of high quality vegetation that harbor species of rare plants or localized animals.

The areas just mentioned where landscape-oriented approaches are weak are, of course, where site-oriented approaches are strong. One other weakness, however, is shared by the two approaches. As mentioned previously, the site-oriented approaches used by the NHP/TNC network typically take a “coarse filter” approach to ecosystem conservation. The same is true for most landscape-oriented analyses. Assumptions are often made that conservation of sufficient habitat for wide-ranging species, particularly keystone species such as large carnivores, will cover the conservation needs of other species as well. In studies conducting “hot-spot” analyses, the assumption is that areas of high species richness should be particularly high priorities for protection efforts.

While there is some justification for these assumptions, just as there is in the faith the NHP/TNC network places on protecting high quality natural communities as surrogates for ecosystems, all uses of “coarse filters” oversimplify what are actually very complicated problems. Areas of landscape that are of use to black bears, for example, may be virtually impassible for salamanders or arogos skippers. Stands of Atlantic White Cedar Forest may support only a low diversity of species, but at least some of these species occur in no other type of community. Within our study area, at least, protection of the few remaining stands of white cedar may contribute more to protecting the region’s natural biodiversity than protecting much larger stands of high pocosin habitat, which, though supporting a much larger diversity of species, have far fewer obligate associates, if any.